



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,352	12/03/2003	Lynn A. Marsan	D-2003-0010	8603
7590	08/24/2004		EXAMINER	
Robert K. Tendler			AL NAZBR, LEITH A	
65 Atlantic Avenue				
Boston, MA 02110			ART UNIT	PAPER NUMBER
			2821	

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/728,352	MARSAN ET AL.	
	Examiner	Art Unit	
	Leith A Al-Nazer	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 03 December 2003.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-20 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 03 December 2003 is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) Notice of Informal Patent Application (PTO-152)
6) Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because reference number 36 in figure 2 is used to refer to two separate elements. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: The abbreviation "VSWR" is not described in the specification. The examiner believes this

term refers to the voltage standing wave ratio. If so, Applicant should include the whole term ("voltage standing wave ratio") at least once in the specification in order to clearly define what is meant by the abbreviation VSWR.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 9, 10, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Rappaport '859.

With respect to claims 9 and 10, Rappaport teaches increasing the size of a monocone antenna without increasing the size of the apex base thereof, thus to decrease the low frequency cutoff of the monocone antenna without affecting the high frequency cutoff of the monocone antenna (column 1, line 1 – column 2, line 30).

With respect to claim 15, Rappaport teaches the monocone being mounted in spaced adjacency to a ground plane (figure 4) and wherein the antenna pattern of the monocone antenna is substantially omnidirectional to the side of the ground plane that the cone is located.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1, 2, 5, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al '152 in view of Josypenko '834 and Olson '268.

With respect to claims 1 and 16, Wong teaches a microwave antenna capable of operating between 11.8 GHz and 14.8 GHz comprising a cone with an apex base size that establishes a high frequency cutoff (column 3, lines 53-55). Claims 1 and 16 require the antenna be capable of operating between 1 GHz and 18 GHz. Frequency scaling is well known in the art. Therefore, it would have been obvious to one having ordinary skill in the art to take the system taught by Wong and modify the dimensions of the system in order to obtain a system capable of operating between 1 GHz and 18 GHz. The motivation for doing so would have been to obtain a device which operates at

a desirable frequency range. Claim 1 further requires a VSWR of less than 2:1. Such a ratio is well known in the art, as is evidenced by Josypenko (column 2, lines 30-40). At the time of the invention, it would have been obvious to one having ordinary skill in the art to take the system of Wong and specifically state a VSWR ratio of 2:1. The motivation for doing so would have been to provide an efficient device by limiting impedance mismatch. Claim 1 further requires a ground plane. Ground planes are well known in the art, as is evidenced by Olson. At the time of the invention, it would have been obvious to one having ordinary skill in the art to provide the system of Wong with a ground plane. The motivation for doing so would have been to provide a method for grounding the device if a direct ground to earth was not feasible.

With respect to claim 2, Wong teaches the conical surface of the cone being edgeless (figure 3a).

With respect to claim 5, Wong teaches a non-conical portion (42) at the wide portion of the cone for extending the height thereof without increasing the size of the wide portion of the cone (figure 3a).

8. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al '152 in view of Josypenko '834 and Olson '268 as applied to claims 1, 2, 5, and 16 above, and further in view of Engargiola US2003/0016181 or Jung US2002/0089463.

Claim 3 requires the conical surface of the cone be multi-sided. Engargiola (paragraph 0023) and Jung (figure 3b) both the conical surface of the cone being multi-

sided. At the time of the invention, it would have been obvious to one having ordinary skill in the art to utilize a multi-sided cone in the system of Wong. The motivation for doing so would have been to achieve a desired radiation pattern (i.e. omnidirectional, dipole pattern, etc.).

With respect to claim 4, Engargiola (paragraph 0023) and Jung (figure 3b) both teach the cone being pyramid-shaped.

9. Claims 6, 7, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al '152 in view of Josypenko '834 and Olson '268 as applied to claims 1, 2, 5, and 16 above, and further in view of Elliot '600.

Claims 6 and 20 require the cone be solid, and claim 7 requires the cone be hollow. Elliot teaches a monocone antenna system in which the cone is either solid, partially solid, or hollow (column 4, lines 38-46). At the time of the invention, it would have been obvious to one having ordinary skill in the art to take the system of Wong and specifically state that the cone is either solid or hollow. The motivation for doing so would have been to obtain an antenna with desired operating properties, such as an antenna with a specific radiating pattern.

10. Claims 8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al '152 in view of Josypenko '834 and Olson '268 as applied to claims 1, 2, 5, and 16 above, and further in view of Dash et al '699.

Claims 8 and 19 require the antenna have a 100-watt CW rating. Such a power rating is common in the art, as is evidenced by Dash (column 1, lines 25-35). At the time of the invention, it would have been obvious to one having ordinary skill in the art to take the system of Wong and specifically state a 100-watt CW rating. The motivation for doing so would have been to provide a system with the capability of radiating effectively over a desired distance.

11. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rappaport '859 in view of Wong et al '152.

Claim 11 requires the cone angle of the monocone be between 24 degrees and 30 degrees. It is well known in the art that the antenna flare angle can be adjusted in order to achieve desired operating properties, as is suggested by Rappaport (column 5, line 60 – column 6, line 30). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to take the system of Rappaport and specifically state a cone angle of between 24 degrees and 30 degrees. The motivation for doing so would have been to obtain an efficient system with desired operating properties, such as a low VSWR.

Claim 12 requires the apex base diameter be 0.065". It is well known in the art that the apex base dimensions can be adjusted in order to achieve desired operating properties, as is suggested by Rappaport (column 5, line 60 – column 6, line 30). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to take the system of Rappaport and specifically state an apex

base diameter of 0.065". The motivation for doing so would have been to obtain an efficient system with desired operating properties, such as a low VSWR.

Claim 13 requires the height of the cone be 1.6" and the width of the widest part of the cone be 1.95". It is well known in the art that the width of the cone can be adjusted in order to achieve desired operating properties, as is suggested by Rappaport (column 5, line 60 – column 6, line 30). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to take the system of Rappaport and specifically state the height of the cone being 1.6" and the width of the widest part of the cone being 1.95". The motivation for doing so would have been to obtain an efficient system with desired operating properties, such as a low VSWR.

Claim 14 requires the cone have a non-conical extension on top thereof. Wong teaches such a non-conical extension (42). At the time of the invention, it would have been obvious to one having ordinary skill in the art to include a non-conical extension, as taught by Wong, in the system of Rappaport. The motivation for doing so would have been to obtain a system which radiates with desired properties, such as a system that emits omnidirectional radiation. Claim 14 further requires the combined height of the cone and extension be 1.6" and the width of the widest part of the non-conical extension be 1.5". It is well known in the art that cone dimensions can be adjusted in order to achieve desired operating properties, as is suggested by Rappaport (column 5, line 60 – column 6, line 30). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to take the system of Rappaport and specifically state the dimensions recited in claim 14. The motivation for doing so would

have been to obtain an efficient system with desired operating properties, such as a low VSWR.

12. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al '152 in view of Josypenko '834 and Olson '268 as applied to claims 1, 2, 5, and 16 above, and further in view of Rappaport 859.

Claim 17 requires the base size establish the high frequency cutoff of the antenna and the overall size of the monocone establish the low frequency cutoff of the antenna. It is well known in the art that frequency scaling can be achieved by adjusting size and angle dimensions of the antenna system, as is suggested by Rappaport (column 1, line 1 – column 2, line 30). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to take the system of Wong and specifically state that the base size establishes the high frequency cutoff of the antenna and overall size of the monocone establishes the low frequency cutoff of the antenna. The motivation for doing so would have been to obtain an antenna that operates at the desired frequency range.

With respect to claim 18, Wong teaches an antenna operable over the microwave region of the electromagnetic spectrum (column 3, lines 53-55). Claim 18 requires the antenna have a VSWR of less than 2:1. Such a ratio is well known in the art, as is evidenced by Josypenko (column 2, lines 30-40). At the time of the invention, it would have been obvious to one having ordinary skill in the art to take the system of

Wong and specifically state a VSWR ratio of 2:1. The motivation for doing so would have been to provide an efficient device by limiting impedance mismatch.

Citation of Pertinent References

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patent application publication further shows the state of the art with respect to monocone systems mounted on an aircraft:
US2003/0227412A1 to Stewart.

Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leith A Al-Nazer whose telephone number is 571-272-1938. The examiner can normally be reached on Monday-Friday, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LA



Don Wong
Supervisory Patent Examiner
Technology Center 2800